

EXHIBIT A

BEST AVAILABLE COPY

F1100

1 of

Sony Confidential	INVENTION DISCLOSURE FORM	Sony Confidential
-------------------	---------------------------	-------------------

Note: Detailed instructions for completing this form can be found in Appendix V of Sony's Patent Guide for Engineers and Inventors.

I. IDENTIFICATION

IPD Case #: 5275449

(IPD use only)

1a. Short Descriptive Title of the Invention:

Clear QAM Tuning Method

1b. Short Summary of the Invention:

An effective and efficient method to tune QAM signals without supplemental navigational information

2. Name of Responsible Patent Coordinator (if any):

Business Address:	Petar Shintani, 16450 West Bernardo Drive, San Diego CA 92127
Business Phone/Fax:	858 942-5502 / 858 942-9200
Business Email Address:	petar.shintani@arn.sony.com

3. Identify all persons who contributed to the present invention including persons from other Sony Divisions, Sony Japan and Outside Companies. Final determination of inventorship is a legal question which will be resolved at a later time.

(1)

Full Legal Name:	Petar Ras Shintani
Home Address:	15616 Bernardo Center Drive #1501 San Diego CA 92127
Citizenship:	Canada
Business Address (include mail drop):	16450 W Bernardo Drive, MZ7250 San Diego CA 92127
Business Phone/Fax:	858 942-5502 / 858 942-9200
Business Email Address:	petar.shintani@arn.sony.com
Division / Company / Location:	VPA / Sony Electronics Inc San Diego CA
Budget code:	5257805009
<input checked="" type="checkbox"/> Sony Employee <input type="checkbox"/> Intern <input type="checkbox"/> Contract/Consultant <input type="checkbox"/> Temp Other:	
Manager's Name:	Hirofumi Usui
Business Address:	16450 W Bernardo Drive, MZ7250 San Diego CA 92127
Business Phone/Fax:	858 942 4050 / 858 942 9200
Business Email Address:	hirofumi.usui@arn.sony.com

(2)

Full Legal Name:	
Home Address:	
Citizenship:	(If Japanese, please provide name in Kanji)

SONY CONFIDENTIAL and PROPRIETARY

BEST AVAILABLE COPY

2 of ____

Business Address (include mail drop):	
Business Phone/Fax:	/
Business Email Address:	
Division / Company / Location:	/ /
Budget Code:	
<input type="checkbox"/> Sony Employee <input type="checkbox"/> Intern <input type="checkbox"/> Contractor/Consultant <input type="checkbox"/> Temp. <input type="checkbox"/> Other :	
Manager's Name:	
Business Address:	
Business Phone/Fax:	/
Business Email Address:	

(3)

Full Legal Name:	
Home Address:	
Citizenship:	(If Japanese, please provide name in Kanji)
Business Address (include mail drop):	
Business Phone/Fax:	/
Business Email Address:	
Division / Company / Location:	/ /
Budget Code:	
<input type="checkbox"/> Sony Employee <input type="checkbox"/> Intern <input type="checkbox"/> Contractor/Consultant <input type="checkbox"/> Temp. <input type="checkbox"/> Other :	
Manager's Name:	
Business Address:	
Business Phone/Fax:	/
Business Email Address:	

(4)

Full Legal Name:	
Home Address:	
Citizenship:	(If Japanese, please provide name in Kanji)
Business Address (include mail drop):	
Business Phone/Fax:	/
Business Email Address:	
Division / Company / Location:	/ /
Budget Code:	
<input type="checkbox"/> Sony Employee <input type="checkbox"/> Intern <input type="checkbox"/> Contractor/Consultant <input type="checkbox"/> Temp. <input type="checkbox"/> Other :	
Manager's Name:	
Business Address:	
Business Phone/Fax:	/
Business Email Address:	

(Use Additional Inventors sheet if necessary)

II. BACKGROUND INFORMATION

1. Do you believe this invention was developed while working under or in the performance of experimental, developmental or research work called for by a Government Contract or upon the understanding that a Government Contract would be awarded?

x NO YES

SONY CONFIDENTIAL and PROPRIETARY

BEST AVAILABLE COPY

3 of _____

2. Has your invention been disclosed to anyone outside of Sony in a speech, exhibit, presentation, product, product manual, report, lecture, trade show, technical article, publication or otherwise?
 X NO YES

3. Is this invention related to any previous Sony Invention Disclosures of which you are aware (made by you or someone else)?
 X NO YES

4. If you responded "YES" to any of questions 1-3, please explain below:

5. Name of product(s) or project(s) for which this invention was developed:

This idea would apply to any receiver than need to reacquire new channel lists in an efficient manner.
--

6. When do you expect a product incorporating this invention to be sold, offered for sale or shown to someone outside of Sony? (If a product or prototype has already been sold, offered for sale or shown, please identify the earliest date this happened.):

Earliest possible introduction would be 2005?

7. Has a working model of the invention been built and tested (or appropriate software been written)?
 X NO YES: If yes, who has witnessed a demonstration, and when?

--

8. List below any patents, publications, articles, texts, products, etc. which describe technology similar to your invention including reference material which may be useful in understanding the background technology of your invention: (Include a copy of each item to IPD. Please include copies of all bibliographical information.)

Have not done a search

III. DESCRIPTION OF THE INVENTION

Provide a concise technical description of your invention in the format outlined below on the following pages.

- 1: Explain the problems, issues or needs which led to the invention, and explain how others have addressed these problems, issues or needs.
 In an analog NTSC TV receiver, it may take several seconds to minutes to do an autoprogram scan of the available signals. As the number of available channels increases, the autoprogramming time will increase. With the advent of digital terrestrial, due to the more complex nature of the digital signal, the time required to do an autoprogram increases dramatically. Furthermore, with the advent digital cable channels the autoprogramming time will increase even more.

SONY CONFIDENTIAL and PROPRIETARY

BEST AVAILABLE COPY

4 of _____

- 2: Describe your invention in terms of how it solves the problems described in paragraph 1. Specifically identify the new or novel features of your invention. Describe the construction and operation of the invention including drawings (flow charts, schematics, block diagrams, mechanical drawings, photographs, etc.) You may attach documentation in the form of letters, memos, engineering notebook pages, etc. if available, or you may use as many invention disclosure data sheets as necessary. Be sure each page is signed, dated and witnessed.

Due to the all or nothing reception character of digital tv signals whether 8 VSB terrestrial or 64/256 QAM digital cable signals, it is very hard to perform a 100% perfect autoprogram. Previously, in the Sony terrestrial DTV receivers to alleviate this problem, a modified autoprogram feature was added. It was an autoprogram feature which only added channels. This way the subsequent autoprogram executions would only need to search the channels that were not in the TV set's channel map when doing an auto program add.

Here, the idea is to further modify the auto program add feature so that it would be even more flexible. In a digital cable ready receiver, typically there would also be a digital terrestrial receiver. Thus the auto add feature would be modified so that it would be able to execute a selective autoprogram add for either the digital terrestrial or the digital cable systems. Furthermore, since in a digital cable system, typically the local cable system has a proprietary control system that allows the cable operator to seamlessly move the digital channels about in their cable system while remaining transparent to the user, the reassignment of digital cable channels is likely to occur more frequently than with a terrestrial digital.

- 3: If there is more than one way to implement your invention, describe the "Best Mode" or your personal preference as to how to *best* implement, build, produce, or use your invention (e.g. preferred parts, materials, techniques, etc. which you feel are best in practicing your invention). Each submitter's opinion is important here, even if there is disagreement. Please list anything you think will make the invention better in any way.

One possible, but not the only method to implement the feature would be to either via the GUI menu of the tv receiver or by a direct entry key on the TV receiver and or its remote control, the user can request an autoprogram add which can be performed for any of the modulation schemes, and or in any combination or with further modifiers, such as with which physical input connector of the TV.

Typically, a user would have two inputs to the TV, one for cable and one for terrestrial, however, in some cases the two can conceivably be combined prior to being fed to the tv. The user would select to do an autoprogram add for either digital cable or for digital terrestrial. The TV would then look at the previous user inputs to determine which input of the TV was connected to which signal source. The receiver would then execute the appropriate autoprogram channel search. This will reduce the number of actual physical channels and modulation schemes that the TV receiver will have to check during an autoprogram search.

Furthermore, the TV set can be made "smarter" by looking for familiar names in the digital streams. Most people identify a name of the channel rather than its physical location. In many cases, the physical RF channel number is associated with the program, and this is typical amongst the analog terrestrial broadcasts. However, in a cable tv channel, whether analog or digital, often the name of the channel is more commonly used to identify the channel. Thus it would be wise for the TV set to be able to identify a digital channel by the name of the channel rather than by the RF channel number. Thus when a digital channel add is executed the TV can be operated such that it does not present the RF channel number to the viewer, but instead present the digital channels name. If the TV is smart enough, it could be monitoring the availability of the digital channels, in the background or even at night, and when a channel disappears, it can use this as a trigger to self-execute a digital cable autoprogram add.

SONY CONFIDENTIAL and PROPRIETARY

BEST AVAILABLE COPY

5 of ____

- 4: Briefly describe any alternate uses, variations or modifications of your invention, if any, which you contemplate.

Signature of Submitter(s)			Read and understood by: Signatures of Witnesses (at least two witnesses preferred)		
<i>Peter Shatin</i>	Date			Date	
	Date			Date	
	Date			Date	
	Date			Date	

SONY CONFIDENTIAL and PROPRIETARY

6 of

Invention Disclosure Data Sheet

Signature of Submitter(s)				Read and understood by: Signatures of Witnesses (at least two witnesses preferred)		
	Date				Date	
	Date				Date	
	Date				Date	
	Date				Date	

SONY CONFIDENTIAL and PROPRIETARY